MOUNT SINAI SCHOOL OF MEDICINE
of The City University of New York
FIFTH AVENUE AND 100TH STREET · NEW YORK, N.Y. 10029

Department of Community Medicine

April 29, 1970

K-127

Mr. Ray Monti
Construction Manager, World Trade Center
Port Authority of New York
111 Eighth Avenue, Room 300
New York, N.Y. 10011

Dear Ray:

The use of a non-asbestos containing mineral wool spray material on the World Trade Center is a significant step forward in reducing the environmental hazard of spray fireproofing application.

An analysis of the fibrous material of the Cafco sample sent by the World Trade Center on April 23, 1970 shows the major constituent to be mineral wool (extruded glass). A small amount of chrysotile asbestos was revealed to be present under electron microscopy, an amount compatible with contamination by processing equipment previously used with asbestos.

The fiber diameter of the mineral wool ranged from 2.5 microns to 7.5 microns with a most probable diameter of about 4 to 5 microns. Considering only the diameter of the fibrous material and using available data on the respirability of fibers, at least 75 per cent of the fibrous material would be classed as non-respirable. Less than 20% of the remainder (5% of the original) could be respirable. Any consideration of the length distribution would reduce the respirable fraction. A similar analysis applied to chrysotile asbestos would indicate that 100% of the material was respirable. (The above discussion applies to the respirability of free single fibers -- that material which remains in large clumps would, of course, not be respirable.)

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Moreover, because of the greater size of the mineral wool, relative to asbestos, any airborne material would not remain suspended to the degree than asbestos can. Hence, we would expect, and our preliminary measurements indicate, its dispersal over New York City, both in distance and duration, to be less.

While no direct evidence exists linking mineral wool fibers to disease, its extensive use has not been of sufficient duration to say that there could not be such disease. Hence, the spray operation, using the sample material, should be contained to at least the degree possible with careful application of the existing tarping procedure in use at the World Trade Center. In addition, all waste material should be removed as soon as practical after spraying and prior to the removal of the containment tarpaulins.

In addition to the fibrous material, various silicates are present in the sample and possibly other undetermined particulate matter. These have yet to be analyzed and their biological effect assessed. Our statement of the reduced hazard of the fibrous material is thus qualified pending receipt of full knowledge of all components of the mix.

Sincerely yours,

William J. Nicholson, Ph.D.
Assistant Professor

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